REMARKS/ARGUMENTS

Applicant acknowledges receipt of the Office Action dated April 4, 2008, in which the Examiner rejected claims 1, 3-4, 6-13, and 15-16 as obvious in view of the combination of Duling (US 3966624) with WO 96/11244; rejected claims 2 and 17-21 as obvious in view of the combination of Duling and WO 96/11244 with Bovington (US 5962381); and rejected claims 5 and 14 as obvious in view of the combination of Duling and WO 96/11244 with Walters (US 5342531).

Applicant respectfully traverses the rejection for the following reasons.

Rejection of claims 1, 3-4, 6-13, and 15-16 as obvious in view of the combination of Duling with WO 96/11244

Claim 1 has been amended to include the limitations of claim 2, which has been canceled.

Rejection of claims 2 and 17-21 as obvious in view of the combination of Duling and WO 96/11244 with Bovington

Claim 1 is distinguishable over the cited references for several reasons.

First, claim 1 requires that at least two properties be controlled and requires that, in addition to viscosity, one of the properties must be selected from the group consisting of traction coefficient, compressibility, lubricating film thickness and pressure response of viscosity. The '244 reference merely discloses controlling one property, namely viscosity. The fact that other properties including miscibility of the fluid in the '244 reference change *incidentally* is not the same as the *active* control of the explicitly recited desired properties.

In a lubricated machine such as a vehicle engine, a transmission or a hydraulic system, temperature change is imposed on the lubricant by the operation of the machine. Active control of lubricant properties is required if those properties are to be maintained close to their optimum values. Such active control would represent a clear change of practice in lubrication, and is quite distinct from the blending techniques described in Duling et al to optimize a lubricant for one operating condition, or to seek the best compromise in properties over a temperature range.

Almost all lubrication tasks depend on at least two lubricant-critical properties of the lubricating fluid. Viscosity is almost always one critical property but (for example, in the case of traction fluids) the traction coefficient is a second, independent property that is essential to the lubricating task, so that in this case, controlling both properties over the operating temperature range is most important. There is no teaching in '244 about the consequences for other critical lubrication properties, of their scheme for exerting limited control over the change in viscosity with temperature. A hydraulic working fluid has to perform general lubrication tasks (separation of metal surfaces in bearings for example) in addition to acting as a pressure transfer medium. A fluid could not be used as a hydraulic working fluid, even if its viscosity were correct, unless it could provide satisfactory performance in those general lubricating tasks. Thus, our demonstration that the elastohydrodynamic film thickness can be controlled during dilution in addition to the viscosity, is important and represents a clear advance in technique over the teachings of '244.

Second, claim 1 requires that the diluent must be miscible with the base fluid under all system operating conditions. This is in direct contradiction to the teachings of the'244 reference, which depends on partial immiscibility of the fluids in order to accomplish separation. The restriction in '244 to the use of fluids that are at least partially immiscible under some conditions (in practice, at temperatures close to ambient) makes the separation of the mixed lubricant into its constituent streams easy, but the control of viscosity that can be achieved in this way is very poor as can be seen in the diagrams presented in '244 (see especially Figure 6 of '244).

The use of a fully-miscible diluent as in claim 1 of this submission permits excellent control of both viscosity and traction, or viscosity and the elastohydrodynamic film thickness, in the few cases for which appropriate pairs of liquids can be found.

Third, although the Examiner points to the single passage in '244 that mentions that distillation "while not preferred," is an alternative separation method, Applicant submits that the cited passage cannot be the basis for an obviousness rejection, as 1) it teaches away from distillation and 2) the '244 reference provides no suggestion of how a distillation process could be executed in a vehicle or other mechanical system. Since distillation is a temperature-based process, whereas the '244 reference relates to a

mechanical separation, the '244 reference would not lead one to attempt a distillation separation[1].

Fourth, at the time the present invention was made, one of ordinary skill in the art would have had no expectation that a distillation-based reversible dilution could be used to control two specific fluid properties in response to changes in conditions. The *Declaration of David Wayne*, the inventor in the present case, which is attached as Exhibit A, sets out several facts establishing the state of the art at the time the invention was made and the fact that the claimed invention was not obvious.

In addition to the inventor's Declaration, Applicant points to an article published in July 2007 under the title '*In Search Of The Perfect Hydraulic Fluid*' by Brendan Casey in Machinery Lubrication Magazine, which is attached hereto as Exhibit B. The performance described by the Mr. Casey as both ideal and unattainable can in fact be realized, at least over a useful working range of temperature, using Applicant's scheme, as is demonstrated in Example 2 of the present application. Applicant points out that the article by Mr. Casey was published 11 years after the '244 reference. It has long been recognized by those skilled in the art that the variation in viscosity with temperature of hydraulic working fluids significantly degrades the performance of load-lifting hydraulic systems, but a solution to this problem by reversible dilution was not obvious, even after the prompt provided by the '244 reference.

For all of the foregoing reasons, Applicant submits that the references do not render the present claims obvious and therefore requests that the rejection be withdrawn.

Rejected claims 5 and 14 as obvious in view of the combination of Duling and WO 96/11244 with Walters

Claims 5 and 14 are distinguishable over the references for the same reasons set out above with respect to claim 1. The references, even when taken in combination would not have led one of skill in the art to expect that the claimed invention would succeed.

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[1] Claimed as "vaporisation, condensation and storage" in claim 1.

Conclusion

Applicants have addressed each ground for rejection. Applicants respectfully submits that the claims are in condition for allowance and distinguishable over the art of record. Applicants therefore request that the amendments be entered and the application be allowed.

In the event the Examiner has any questions or there are any issues with respect to the application, the Examiner is respectfully requested to telephone the undersigned at the telephone number below prior to the issuance of any written action.

Respectfully submitted,
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